

In re Appln. of Eberle et al.  
Application No. 10/661,269

*CLAIM AMENDMENTS*

Claims 1-22 were previously canceled.

Claim 23 (canceled).

Please insert new claims **24-33**

24. (New) An ultrasound transducer assembly comprising:

integrated circuitry;

an ultrasound transducer array including a set of ultrasound transducer elements,  
each transducer element comprising transducer material;

a flexible circuit to which the ultrasound transducer array and the integrated circuitry  
are attached during fabrication of the ultrasound transducer assembly, the flexible circuit  
comprising a flexible substrate that provides a re-shapeable platform to which the integrated  
circuitry and transducer elements are attached, wherein the flexible substrate comprises  
surface discontinuities, and ones of the surface discontinuities are disposed between adjacent  
pairs of transducer elements of the ultrasound transducer array.

25. (New) The ultrasound transducer assembly of claim 24 wherein a first transducer  
element of the set of transducer elements has a first lengthwise axis and a second transducer  
element of the set of transducer elements has a second lengthwise axis, and wherein the first  
lengthwise axis and the second lengthwise axis are substantially parallel.

26. (New) The ultrasound transducer assembly of claim 25 wherein ones of the  
surface discontinuities extend lengthwise substantially parallel to the first lengthwise axis.

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27. (New) The ultrasound transducer assembly of claim 26 wherein the first transducer element has a first transducer element length along the first lengthwise axis, and a one of the surface discontinuities has a discontinuity length, the first transducer element length being less than the discontinuity length.

28. (New) The ultrasound transducer assembly of claim 24 wherein ones of the surface discontinuities are formed by cutting completely through the flexible substrate.

29. (New) The ultrasound transducer assembly of claim 24 wherein the flexible substrate has a first thickness, wherein individual ones of the surface discontinuities are formed by a groove within the flexible substrate, and wherein the groove has a depth that is less than the first thickness.

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30. (New) A method for fabricating an intravascular ultrasound transducer assembly comprising a flexible circuit, integrated circuitry, and a set of transducer elements, the method comprising the steps:

fabricating the flexible circuit comprising a flexible substrate and a set of electrically conductive lines formed on the flexible substrate;

fabricating a transducer sheet comprising a transducer material;

attaching the transducer sheet to the flexible circuit while the flexible circuit is in a substantially flat shape;

dicing the transducer sheet into a set of discrete transducer elements, wherein the dicing step also includes the step of forming surface discontinuities having a depth of at least 3  $\mu\text{m}$  from a surface of the flexible substrate, and wherein ones of the surface discontinuities are disposed between adjacent transducer elements of the set of discrete transducer elements.

31. (New) The method of claim 30 wherein the forming surface discontinuities step comprises forming discontinuities that extend completely through the flexible substrate.

32. (New) The method of claim 30 wherein the dicing step is performed using a saw.

33. (New) The method of claim 30 wherein the dicing step is performed using a laser.